

## R E M A R K S

The drawing has been objected to. Both the specification and the drawing are amended to make the application clearer and, as amended, it is believed that absolutely no ambiguity exists in the drawings, thereby overcoming the objection.

Claims 1-27 were rejected under 35 USC 112, first paragraph because, according to the Examiner, the limitation “tuple” is not found in the specification, and the disclosure “does not appear to lend support for the limitation ‘storing a tuple in an index at a position corresponding to at least a portion of the first cyclical redundancy check value’.” The Examiner, in fact, asserts that “The limitation is not logically possible ....” Respectfully, applicant disagrees.

First, the word tuple is well known in the database art. In [www.webopedia.com](http://www.webopedia.com), a site that offers definitions in various arts, the term “tuple” is defined as “In relational database systems, a record” (emphasis supplied). Short, and to the point. Rephrased, a tuple is a record in a relational database sense, which typically is a multi-field object (to distinguish it from other definitions of the word “record.”

Thus, the terms “record” and “tuple” are synonymous and the database arts, and the specification is amended herein to make is absolutely clear that the information stored in the index cluster’s entries are records, or tuples. For example, the specification now states:

Each index table cluster 103<sub>i</sub> contains an array of entries. Fig. 1 illustrates clusters with four entries in which records, or tuples, can be stored, as illustrated by tuples, 105a - 105d of cluster 103<sub>1</sub>, but the number of entries may be varied to optimize the performance of the index table 101, as will be explained in detail below.

Reviewing claim 1, and in particular the step of *storing a tuple in the index table*, the Examiner’s attention is respectfully directed to the text that starts at page 6, line 25, and subsequent paragraphs. The page 6, lines 25 paragraph discloses what the specification calls “a hybrid method” where a composite 4-byte hash value is obtained from a data record and is divided into two two-byte values, or two distinct two-byte hash values are obtained from the data record. One of the two-byte values is used for *indirect addressing*, and the other of the two-byte values is used in the *linear search*. The former is the source of the plurality of index clusters that Fig. 1 depicts and the specification describes, and the latter relates to the plurality of entries that are allocated to each index

cluster, into which tuples may be inserted. It is noted that the tuple inserted into an index cluster's entry is not the data record that the database stores; it is just the two-field information that allows one to access the data record.

Turning attention to the language of the claim 1 clause that the Examiner appears to have a problem with, it specifies the step of "storing a tuple in an index." This corresponds to the storing of the two-byte CRC-16 field and the four-byte record offset field. See the paragraph starting at line 25 of page 7.

The clause further specifies that the storing is "at a position corresponding to at least a portion of the first cyclical redundancy check value." This, of course, corresponds to the selection of the cluster into which the tuple is inserted based on the first CRC value. See line 1 of the paragraph beginning at line 1 of page 7.

The clause still further specifies that the tuple contains "the record address and at least a portion of a second cyclical redundancy check value determined for the key." This corresponds to the second field of the tuple, and the first field of the tuple, respectively, which, as described in the specification, is inserted in an index cluster entry such as entry 105a.

It is noted that no logical impossibility exists, contrary to the Examiner's view.

Based on the above, it is respectfully submitted that claim 1 is fully supported by the specification and, therefore, in compliance with 35 USC 112, first paragraph. Since the Examiner has not commented about any other claim relative to 35 USC 112, first paragraph, it is assumed that the rejection of claims 2-27 was based on the fact that these claims depend on claim 1. Therefore, it is respectfully submitted that the rejection of claims 1-27 under 35 USC 112, first paragraph is overcome.

Claims 1-27 were rejected under 35 USC 112, second paragraph, as being indefinite because, according to the Examiner, the phrase "storing a tuple in an index at a position corresponding to at least a portion of the first cyclical redundancy check value" is unclear "as to how an index can store a tuple." Respectfully, applicant traverses.

If the Examiner means "how an index can store" in the sense that the Examiner believes that the acting element is the index, then applicant respectfully submits that the step of storing is not taken by the index, and that nothing in the subject clause actually suggests that the step of storing is taken by the index. If, as is more likely, the Examiner

questions whether a tuple can be stored in an index, the answer is clearly in the affirmative. In an abstract sense, a multi-field record can be stored in a computer file, and it is well established in the art that a multi-field record can be called a “tuple,” (see the remarks above). Also, a file can be called an index. Therefore, even in the abstract there is no lack of clarity, there is no ambiguity, and there is no violation of the 35 USC 112, second paragraph requirements. With the hindsight of applicant’s teachings in the specification, where the index that is shown in Fig. 1 has entries into which two-field records or tuples can be stored, there is no question as to the clarity of the phrase “storing a tuple in an index at a position corresponding to at least a portion of the first cyclical redundancy check value.” Nevertheless, for sake of clarity, the following dissects the phrase in terms of the teachings found in applicant’s specification.

storing a tuple	storing information that constitutes a multi-field record
in an index	in an entry of the index depicted in Fig. 1, for example in the entry designated 105a
at a position	in a particular cluster of the index, where each cluster of the index is at a particular position in the index
corresponding to at least a portion of the first cyclical redundancy check value	which cluster is selected based on – or addressed by – a two-byte CRC value.


Based on the above, applicants believe that claim 1 is in full compliance with 35 USC 112, second paragraph, thereby overcoming the rejection. Since the Examiner has offered no comments relative to the rejection of claims 2-27 in connection with 35 USC 112, second paragraph, it is assumed that the rejection was based on the dependence of these claims on claim 1. Since the above remarks overcome the rejection of claim 1 under 35 USC 112, second paragraph, it is respectfully submitted that the rejection of claims 2-27 is also overcome.

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In light of the above amendments and remarks, the Examiner's approval of the drawing amendment is respectfully requested, as well as reconsideration and allowance of the subject claims.

Dated: 6/22/04

Respectfully,  
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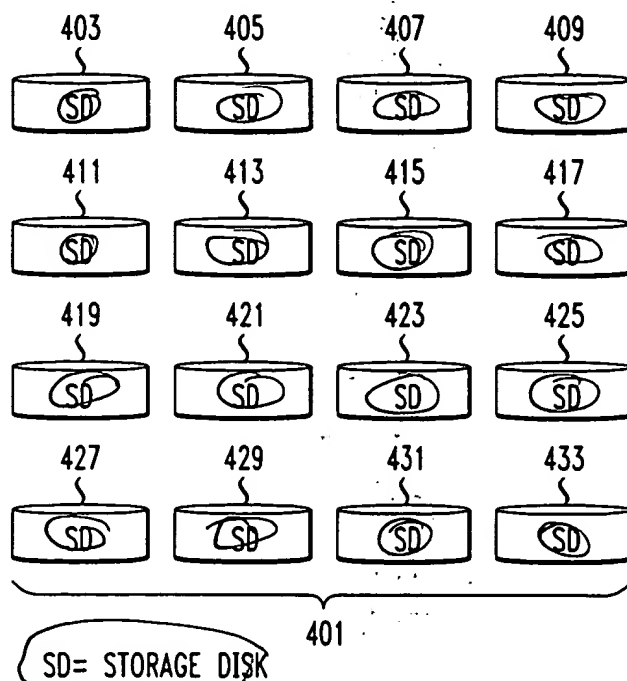
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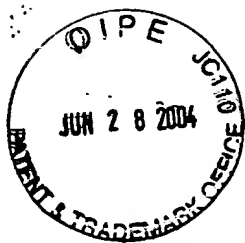
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FIG. 4



*added matter*



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FIG. 1

101

